LET'S GO WALKING

AMERICAN SPRINGS TRAIL

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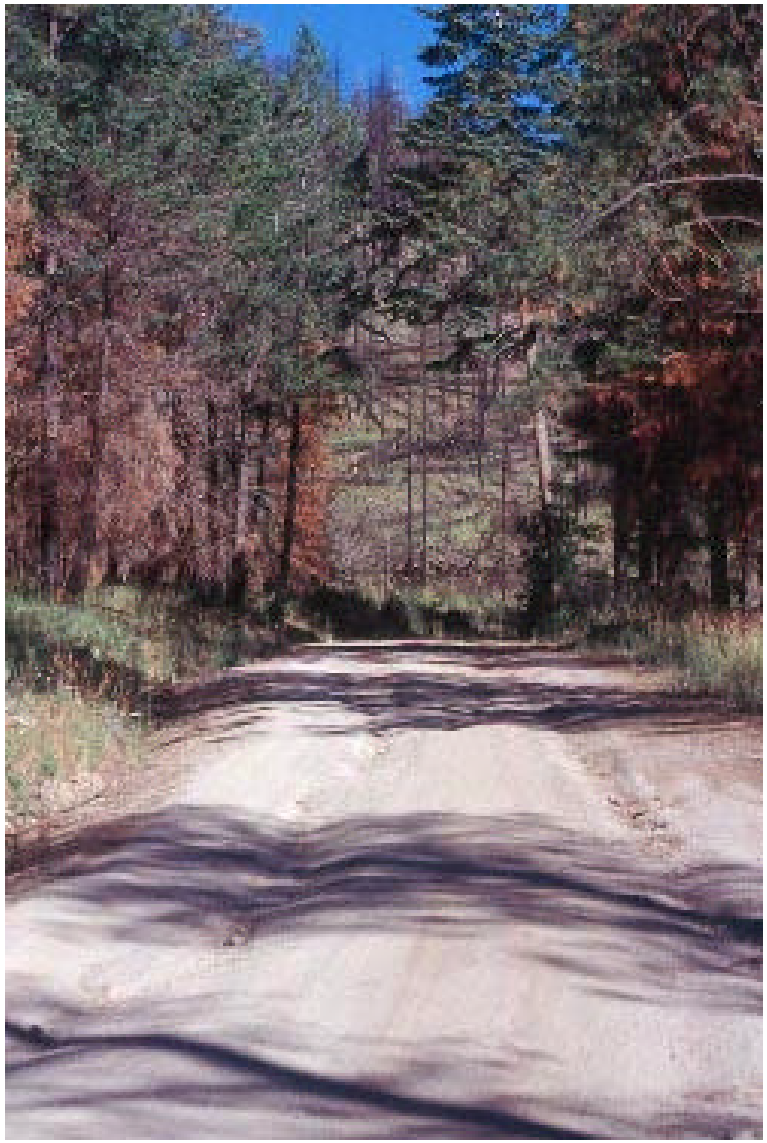
A TRAIL GUIDE TO VIEW RECOVERY OF THE NATURAL ENVIRONMENT FROM THE CERRO GRANDE FIRE

PURPOSE

This site provides information about natural recovery of areas burned by the Cerro Grande fire, particularly, areas of high-intensity burn. Our intention is that you print out a copy to take along with you as you walk along these trails. Since this trail is on Forest Service land, make sure that the area is open for public access.

To provide information about recovery in a mid-elevation site, this hiking guide describes the American Springs road and trail.



SAFETY CONCERNS

• Do not go into any canyon if it is raining, is likely to start raining, or there has been recent rains. These areas are subject to flash floods.

• Be aware of the techniques to protect yourself from lightning.

• Do not walk the trails when there is wind and chances of trees falling.

• Take plenty of water and protect yourself from the sun.

• Avoid encounters with large mammals.

• Watch out for poison ivy. Although presently very spotty, it is there! Some people develop rashes from touching the plant or the white berries. AND DON'T EAT THE BERRIES!

THE FIRE

The Cerro Grande fire burned from May 4 through May 28, ultimately burning 43,000 acres. High-intensity burn (areas where all trees were killed) made up 34 per cent of the 43,000 acres. The American Springs area burned during May 7.

Pre-Cerro Grande fire studies done by Randy Balice et al. (1998-1999) indicated that the forest was dense. In plots in the American Springs area there were over 600 trees per acre of small trees less than 2 ft tall. Trees greater than 2 ft tall and less than 8 inches in diameter counted 609 per acre. Trees equal to or greater than 8 inches in diameter were 175 trees per acre. This density provided the conditions for high-intensity fire in this area.

After the fire, the many acres of high-intensity burn that were upstream from the community or Laboratory sites were seeded with annual and perennial grasses. Volunteers raked, seeded, and mulched areas of hydrophobic soils. In some cases, hotshots downed trees to provide for erosion control and wattles were used in drainage areas to slow water.

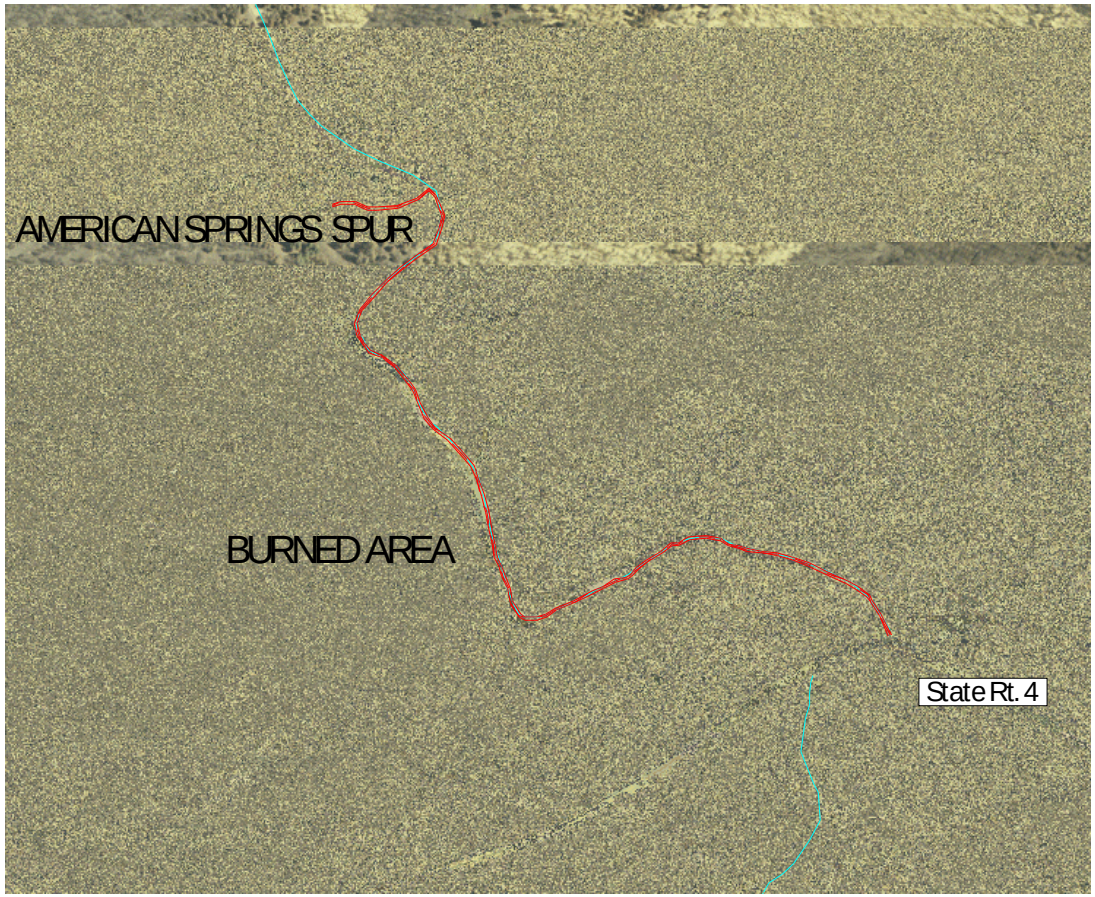
Wattles in drainage

AMERICAN SPRINGS ROAD AND TRAIL

This trail begins 5.8 miles from the stoplight on Diamond Drive and West Jemez Road. Travel south on West Jemez Road to the junction with State Route 4. Turn right and negotiate the first set of curves going into the Jemez Mountains. As the highway tops out there is a dirt road to the right—the American Springs Road. This area is a fuel wood gathering location so watch for trucks. Persons unable to walk uneven surfaces or are disabled can access the area by vehicle.

View from curve overlooking the area of the 1977 La Mesa fire

The portion of American Springs trail described in this guide is overlaid on a digital orthophoto (taken in the summer of 2000) on the accompanying map. The green areas (lower right) are live trees. The gray areas (left) were severely burned. The straw-colored areas (upper right) are severely burned areas where volunteers raked, seeded, and put straw mulch on the soil to aid in vegetation recovery.



When you look at these rehabilitated areas today, you will see burned trees with a vigorous green understory of grasses and wildflowers.

THE TRAILHEAD

The forest area in the first part of the road/trail was lightly to moderately burned. There is little change in the tree canopy after the fire. Walk down the trail about a quarter-mile to come to areas that were severely burned. This trail guide is primarily about the severely burned area and recovery.

Trailhead

CLEARING OF THE TREES

Along the roadside, many trees have been cut down, providing protection from hazard trees and fuel wood for many people in northern New Mexico. Fuel wood permits are obtained from the US Forest Service.

Cleared roadside

THE PLANT COMMUNITY

This area was a mixed conifer forest with some pure stands of ponderosa pine. The coniferous species found in this forest type include ponderosa pine, limber pine, Douglas fir, and white fir. Small stands of aspen are intermixed, indicating past fire. Ponderosa pine has a thick bark that generally protects it from low-intensity fires, but crown fires are destructive. The thin barks of the Douglas fir and white fir make them more susceptible to girdling by the heat of a fire, causing these species to die more readily.

Mixed conifer forest with aspen groves

Mixed conifer forest (lightly burned) in the American Springs area

REHABILITATION EFFORTS

Prevention of downstream erosion after the fire resulted in rehabilitation efforts, including seeding and mulching. Some of this area has been mulched and seeded with both annual and perennial grass species.

Areas dominated by rye, barley, brome, and slender wheatgrass

Annual rye

Annual barley

The hand and aerial seeded grasses did not become well established on steeper slopes. A closer look, however, will reveal that many of these slopes have sprouts of oak and other shrubs, such as New Mexico locust.

The annual seeded grasses will dominate for the first year but then the perennial slender wheatgrass and native species will increase. In a few years, native species will dominate these sites. Native shrubs will increase in numbers and eventually the slopes will be thickets of oak and New Mexico locust.

LARGE ANIMALS YOU MIGHT SEE

Elk

Deer

Bear

Elk, deer, and bear are attracted to the burned areas. The new lush growth of emerging plants is a favorite food. Growth of aspen and other sprouting shrubs can be reduced by browsing. Bear search for insects in burned trees.

Browsed aspen shoot

BIRDS YOU MIGHT SEE

Birds forage in burned areas.

Photos by D.C. Keller

Mourning dove

Hairy woodpecker

Downy woodpecker

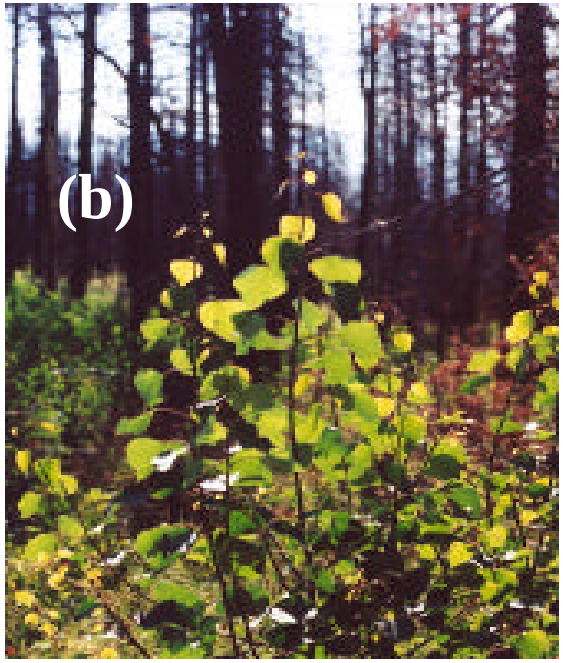
Mountain chickadee

Hepatic tanager

Flicker

WHAT APPEARS DEAD MAY STILL BE ALIVE

The white dead trunks of the aspens (a) stand contrasted against brown and green of the burned conifers. Although the tops are dead, the roots have sent up many sprouts. Some are over 8 feet tall (b).

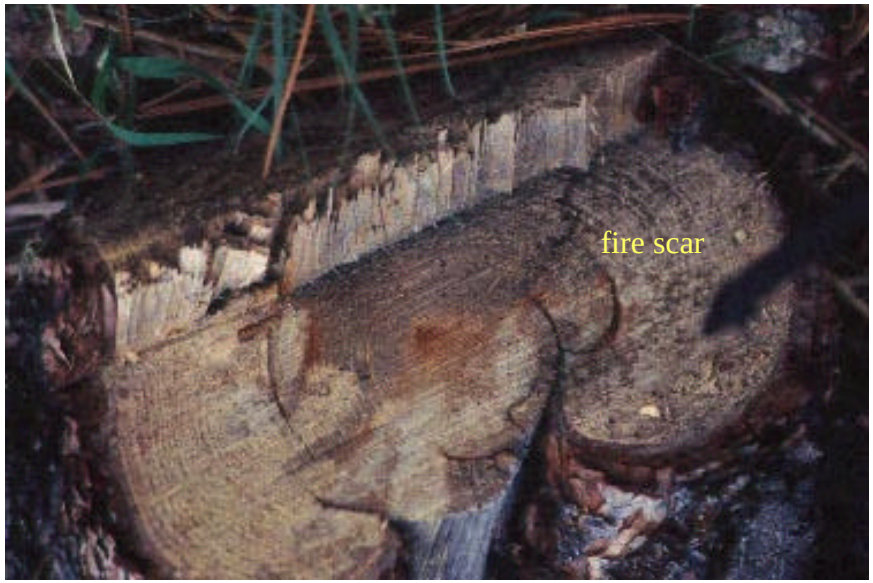


Picture “c” shows roots on the soil surface. These roots send up aspen shoots. See if you can count the number of shoots around an individual aspen!

HIDDEN INFORMATION

Information about the growth of a tree is hidden in the tree rings. These rings can tell us about the history of the area. Each ring represents one year of growth. By counting the number of rings, you can estimate the age of the tree. If the tree is partially burned by a fire, the tree will live and heal the wound, creating a fire scar.

As you walk along the trail, look at the cut stumps. Notice how few have fire scars. This indicates this area had not had fire in a very long time. Studies have shown that before 1900 the fire frequency was one fire every 5 to 20 years. Many areas have not had fire for over 100 years. Forests become dense with conditions for high-intensity burns that kill the overstory trees rather than clearing the underbrush.



SHRUBS ALONG THE TRAIL

A variety of shrubs can be seen within the area: oak, New Mexico locust, and raspberry.

New Mexico locust

This spiny member of the Pea family blooms in the late spring and early summer and is often found in burned or disturbed areas. Many burned slopes on the areas of the La Mesa, Dome, and Cerro Grande fires have thickets of New Mexico locust along with Gambel oak.

Sprouts in Dome fire area

Sprout within a week of a fire

New Mexico locust bloom

IMPORTANCE OF SHRUBS

Shrubs begin to sprout immediately after the fire and provide early cover in a burned forest. The raspberry and other fruiting shrubs provide food for birds and other animals.

WILDFLOWERS ABOUND

After fire, wildflowers are often first to appear. As you walk along the road, you will see a variety. They may often be taller or larger than plants you have seen elsewhere. Nutrient-rich ash acts like adding fertilizer to a flower bed making the flowers taller and more robust.

Red beardstongue, or scarlet bugler, is tall and in clumps throughout the area.

MORE WILDFLOWERS

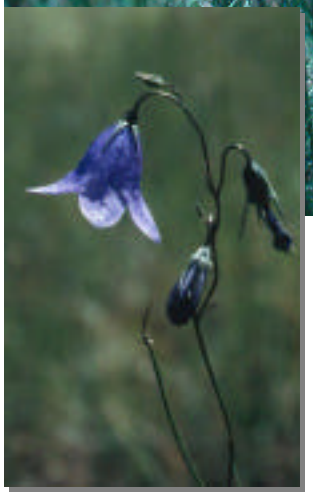
Black-eyed Susan with a painted-lady butterfly

Wild nodding onion

Yarrow

Purple daisy

James geranium



Harebell

Goldenrod

Still more wildflowers found along the trail.

THE SPRINGS

About half a mile down the main dirt road you will find the spur road to American Springs on the left. Follow this road a short distance until you reach the springs.

The American Springs spur road turnoff

Halfway down the spur road

Historically, the spring served as a watering stop for cattle and sheep drives to and from the Valle Grande. A small flow discharges from a perched aquifer. Grass provides a bedding area for elk or deer. Down the slope from American Springs is Sawmill Meadow where the 1954 fire was started. That fire was one of the first fires that threatened the town site but was stopped before reaching Los Alamos Canyon.

In 1935, the Civilian Conservation Corps enclosed the spring in stone and concrete. Today the spring is surrounded by a dense stand of grass and aspen sprouts.

THE DIFFERENCE A LITTLE WATER MAKES

Down the slope from American Springs to the right side of the road, the drainage from the springs creates a wet trench. The small stream provides necessary moisture for many species. Walk along the stream and look at the variety the water affords. Within the stream channel is the pretty little Veronica, or American speedwell. On either side of the stream is red top grass and several sedges. Beebalm is found in small patches, as is black-eyed Susan and harebell.

Horsemint, or beebalm

The tiny flower of American speedwell, or Veronica, found in the stream has two stamens with small blue or pink anthers.

INVASIVE SPECIES vs NATIVE SPECIES

When the ground is denuded, invasive non-native species can get a “foothold.” Such species thrive in areas with little competition. One such species is Canada thistle. This rhizomatous plant can spread rapidly and take over the niche of native species and is of concern in burned areas.

Canada thistle has taken a foothold along the spring drainage. It can be identified from other native thistle species by the small flower head which is only one-half inch across. Canadian thistle will slowly disappear as the native grasses and wildflowers increase.

Canada thistle

Native thistles

New Mexico thistle

Pale thistle

Our walk stops at the American Springs area. However, the trail continues into Water Canyon. Because of heavy rains after the fire, the Water Canyon trail has places that are difficult to walk and may be impassable. This road was once the original route to the Valle and was part of a historic trail from Jemez Springs to the Española Valley. The spring was part of a water system that provided water to the Laboratory in the early 1950s. Remnants of pipes still can be found.

The green of the shrubs, grass, and wildflowers dulls the memory of how black this area was last summer. Nature has an amazing ability to regenerate. We hope this walk has provided you with new hope and a sense of amazement at the diversity of plants returning to the burned landscape.

The mountain

Walk this trail another time and continue to be amazed at the changes that rapidly take place as an area recovers.

Grass Species Along the Trail

Annual rye (***Lolium multiflorum***)
Annual barley (***Hordeum vulgare***)
Brome (***Bromus marginatus***)
Slender wheatgrass (***Elymus trachycaulus***)
Red top (***Agrostis gigantea***)

Shrub Species Along the Trail

Oak (***Quercus gambellii***)
New Mexico locust (***Robinia neomexicana***)
Raspberry (***Rubus strigosus***)
Sedge (***Carex*** spp.)

Trees Species Along the Trail

Aspen (***Populus tremuloides)***
Ponderosa pine (***Pinus ponderosa***)
White fir (***Abies concolor)***
Douglas fir (***Pseudotsuga menziesii***)
Limber pine (***Pinus flexilis***)
Rocky Mountain maple (***Acer glabrum***)

Wildflower Species Along the Trail

American speedwell, or Veronica (***Veronica americana***)
Harebell (***Campanula rotundifolia***)
Wild nodding onion (***Allium cernuum***)
Black-eyed Susan (***Rudbeckia hirta***)
Scarlet bugler, or red beardstongue (***Penstemon barbatus***)
Purple daisy (***Eriogonum*** spp.)
Horsemint, or beebalm (***Monarda menthaefolia***)
Goldenrod (***Solidago*** spp.)
Yarrow (***Achillea millefolium***)
James geranium (***Geranium caespitosum***)
New Mexico thistle (***Cirsium neomexicanum***)
Pale thistle (***Cirsium pallidum***)
Canada thistle (***Cirsium arvense***)

Animal Species Along the Trail

(Not that there aren't more species out here, these are just the ones you would most likely see.)

Rocky Mountain elk (***Cervus elaphus***)
Abert's squirrel (***Sciurus aberti***)
Deer (***Odocoileus hymenoxys***)
Chipmunk (***Tamias minimus***)
Bear (***Ursus americanus***)
Common garter snake (***Thamnophis sirtalis***)
Cottontail rabbit (***Sylvilagus audubonii***)
Prairie lizard (***Sceloporus undulatus***)

Bird Species Along the Trail

Mourning dove (***Zenaida macroura***)
Common raven (***Corvus corax***)
Downy woodpecker (***Picoides pubescens leucurus***)
Stellar's jay (***Cysnocitta stelleri***)
Hairy woodpecker (***Picoides villosus***)
Flicker (***Colaptes*** spp.)
Mountain chicadee (***Parus gambeli***)
Hepatic tanager (***Piranga flava***)

RECOMMENDED READING

Would you like to know more about the history, trails, and fire ecology? Here are some references:

Dorothy Hoard, ***Los Alamos Outdoors,*** Los Alamos Historical Society (1981). This book provides interesting tidbits about the trails and areas of the Pajarito Plateau. Published in 1981, black and white pictures can give you an idea of changes to various areas.

Craig Martin, ***Los Alamos Trails; Hiking, Biking, and Cross-Country Skiing***, All Seasons Publishing (1999). This book is about trails of the area and gives mileages and information.

Teralene Foxx, "Out of the Ashes," Los Alamos National Laboratory report LA-LP-01-20 (2001). This booklet provides information about natural recovery after fire.

Teralene Foxx and Dorothy Hoard, ***Flowering Plants of the Southwestern Woodlands,*** Otowi Press (1995)***.*** This book is a comprehensive field guide for wildflower identification.

Randy Balice and Brian Oswald, "Fuels Inventories in the Los Alamos National Laboratory Region," Los Alamos National Laboratory report LA-13572-MS (1999).

Randy Balice et al., "Forest Surveys and Wildfire Assessments in the Los Alamos Region; 1998-1999," Los Alamos National Laboratory report LA-13714-MS (2000). The Balice reports describe results of forest surveys in relation to risks of wildfire.

ACKNOWLEDGMENTS

We would like to acknowledge various people who have helped to make this trail guide possible. Randy Balice provided some facts related to the pre-fire conditions along this trail. Dorothy Hoard accompanied Terry on various hikes to look at the recovery. Hector Hinojosa and Teresa Hiteman provided the editing and formatting. The support of John Huchton and Carey Bare, Team Leaders for the Environmental Information and Natural Resources Management Teams, is appreciated. Diana Webb, Group Leader at ESH-20 has also been supportive. We would also like to thank David Van Etten, IM-1, who provided the support to place this document on the ESH-20 web page.

Black-eyed Susan